

**REMARKS**

Claims 56-73 have been added. Support for Claims 56-73 is found in original Claims 56-61. Support for Claims 56-61 is found on page 5, lines 1-5. Support for Claims 62-73 is found on page 15, lines 24-26. Support for Claims 68-73 is found on page 24, lines 25-27.

**Rejection of Claims 33-36 and 53 Under 35 U.S.C. §112, First Paragraph**

Claims 33-36 and 53 have been rejected under 35 U.S.C. § 112, first paragraph, as it is said the subject matter was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention.

Irradiation of cultured keratinocytes with ultraviolet light is used to trigger apoptosis, which drives the catagen stage of the hair follicle growth cycle. The cultured keratinocytes are used in studies to identify agents that can block apoptosis, thereby delaying catagen in hair follicles. Ultraviolet irradiation of keratinocytes in culture is not intended to reproduce all the conditions occurring in male pattern baldness or in alopecia areata.

The peptide having amino acid sequence CATDIKGAEC (SEQ ID NO:9) promoted the growth and survival of keratinocytes in mouse hair follicles in organ culture, as the peptide had promoted the survival of p75<sup>NTR</sup>-NIH 3T3 fibroblast cells in culture (Example 18; Figures 12A-12C). See the Declaration of Barbara A. Gilchrest, M.D. Under 37 C.F.R. § 1.132 mailed to the U.S. Patent and Trademark Office April 8, 2002. Thus, as predicted by cell culture experiments, peptides smaller than nerve growth factor can inhibit apoptosis, thereby delaying catagen in hair follicles.

Others of skill in the art have used keratinocytes in culture to predict the behavior of keratinocytes in differentiation and in regulation of the hair growth cycle. See Detmar, M. *et al.*, *J. Invest. Dermatol.* 101(1 Suppl.): 130S-134S, 1993 and Moll, I., *J. Invest. Dermatol.* 105(1): 14-21, 1995, Exhibits A and B with the Declaration of Barbara A. Gilchrest, M.D.

One of ordinary skill in the art would understand from the specification that the methods of the invention can be used to inhibit apoptosis of keratinocytes in hair follicles, thereby prolonging the anagen phase. Applicants have previously presented points leading to this

conclusion. See the Interview Summary, with Appendix, mailed to the United States Patent and Trademark Office on 23 April 2004.

**CONCLUSION**

The Examiner is requested to consider the above amendments and remarks, and to withdraw the remaining rejection. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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